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Modern Dentistry for the Laity

and

Industrial Dentistry *for* the Corporation

SECOND EDITION

By

Alfred Armstrong Crocker

D. A. Farnsworth D.D.S.

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Modern Dentistry for the Laity

and

Industrial Dentistry for the Corporation, Modern Preventive Dentistry and Industrial Welfare Dentistry

By

Alfred A. Crocker

Cincinnati, Ohio

1919

SECOND EDITION

Published by

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THE MAGAZINE OF DENTISTRY

Founded 1847

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Ohio Dental and Surgical Depot
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Ohio Dental and Surgical Depot
Cincinnati, Ohio

DEDICATED to the Dental Profession, whose avowed purpose is the prevention of decay and preservation of the teeth of the human race

PREFACE TO SECOND EDITION

Much information and valuable knowledge is to be found if one will spend the time to dig it up. To dig it up and then place it before those most interested to know it is indeed a valuable work.

The importance of Dentistry as a health profession has been greatly increased by the emphasis given the subject of Preventive Dentistry and Oral Hygiene during the war. The proving up of various relationships of systemic disease to oral sepsis has also hastened the necessity of bringing the care of the teeth prominently before the American public. The care of the teeth of children as featured in munici-

pal free dental clinics is a great educational work calculated to bring in a new generation, well informed on the importance of care of their teeth.

The laity at large would do well to take cognizance of the significance of children's clinics, for what is good for the coming generations is good for the present one. A clean and healthy set of teeth makes a bright scholar, likewise a clean and healthy set of teeth makes a successful grown-up. This subject is one of the principal features of general attractiveness.

In publishing this second edition MODERN DENTISTRY FOR THE LAITY AND INDUSTRIAL DENTISTRY FOR THE CORPORATION the writer has sincere hopes that this pamphlet will help the educational contributions of others and bring

the gospel of Tooth Hygiene to everybody, both young and old.

The similarity, in some instances, of these several essays, is on account of their having been written to cover the subject as a synopsis to suit various prominent magazines in which they were published. It being the idea to make each essay cover some of the important ground and be in itself an argument. However, each one has a progressive addition of new ideas which occurred to the writer as the subject progressed. The last essay "Tooth Troubles," gives an idea of what prevention prevents. For those interested in establishing clinics a list of actual requirements is given in the last chapter.

ALFRED A. CROCKER.

January, 1919.

PREFACE TO FIRST EDITION

In writing these short essays on dentistry and its application to the individual welfare it has been the writer's intention to point out how decay of the teeth is the prime factor in the ultimate loss of the teeth and also how this destructive cause can be prevented. Caries, the technical dental term used meaning decay of the tooth structure, has been a prime subject of dentistry and has received immense attention by the dental profession. The investigator who isolated the germ of caries, the late Dr. W. D. Miller, an American, spent years on this subject and we have as a result a sure method of preventative dentistry. It is to

detect the decay. This can only be done by a dentist. The operation of detecting decay is known as prophylaxis. The first monument ever erected to a man of the dental profession was erected on the spacious campus of the Ohio State University to the memory of Dr. W. D. Miller. This statue of Dr. Miller stands in a very prominent position of the grounds of Ohio's largest university. From this you will infer the importance and intimate meaning of this subject of decay to humanity. To explain this subject and its application to every-day efficiency this pamphlet is written.

ALFRED A. CROCKER.

June, 1918.

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Modern Dentistry

THE ZERO SYSTEM AND EFFICIENCY DENTISTRY —TOOTH INSURANCE— DECAY PROOFING

The idea to follow in regard to your teeth is prevention of decay. Decay is constantly starting its destructive process, and by the use of the tooth brush and antiseptics is partially counteracted, but it takes periodical examination by a dentist to keep the teeth in perfect condition and to detect the decay before it gets a start toward the certain destruction of the teeth. By periodical prophylaxis, cleaning and examination of the teeth, the dentist performs a work which will save your teeth

in their original perfect condition, or if you are just starting with the periodical prophylaxis, the dentist will be able to preserve your teeth in as good condition as they are now or will be after he once gets them again in perfect condition. Efficiency Dentistry by the Zero System means preservation of the teeth, reducing the decay to the minimum or zero point, and maintaining your energy at a maximum. It also means minimizing tooth difficulties, preserving the teeth in as near their pristine perfection as is possible and making the necessary fillings, inlays or restorations approach the zero point. Patients who have heeded the principles of this system of periodical examination by their dentist have very few filled teeth,

and where there is a filling it is a very small one. This is because the decay was caught by the dentist at a periodical examination before it had caused very much damage. A small pin point filling was all that was necessary. Had such a decay been allowed to run until the tooth ached, the whole crown of the tooth might have had to be filled or the tooth might have had to be extracted.

The attention to the teeth is not a vogue of society nor an effort *per se* to maintain good appearance. While dentistry has a feature of esthetics, its larger, its main demand is necessity. There has been evolved through the fifty odd years of the development of the present practice of dentistry by the dental profession the system now termed

Efficiency Dentistry. A patient can, by periodical visits to the dentist, minimize the decay of the teeth approaching the zero point. The dentist at each periodical visit of the patient examines the teeth and detects any unsoundness, and if a cavity is found, a filling is made. Such a discovery is of course made long before the decay would be advanced enough to cause the patient to notice it by any pain. Sometimes a patient, when a small cavity is starting, complains of lassitude and lack of energy, but of course does not attribute it to a small cavity in a tooth, for at this stage the cavity is small and often between the teeth and not observable except to a dentist, and not possible to locate it with the tongue. Be-

sides, the average patient does not complain until a tooth aches, and of course by that time the decay has reached the sensitive nerve pulp. During the development of a decaying tooth, from the time of the first infinitesimal pit until it has enlarged and deepened until it starts to ache, there is a sapping of the patient's energy and an increasing condition of debility is developed until the ache and pain in the tooth announces to the patient the true cause. By following the Zero System of fillings by adhering to Efficiency Dentistry, the decay is discovered by the dentist long before it reaches the climax in the aching tooth, and consequently the fillings are very small and the teeth remain strong and vigorous.

Patients who have, upon ad-

vice of their dentist, faithfully followed this principle of Efficiency Dentistry, have very few filled teeth and have never had a tooth ache. They have likewise always been at high nerve force so far as their teeth are concerned. The dentist eventually gets the patient, but what about the energy and health of the patient in the meantime? The dentist is consulted so late and the decay has gone so far that it means a large filling, a withdrawal of the tooth, restoration of some kind, an artificial tooth, crown or bridgework. This calamity is all saved by Efficiency Dentistry, and the nerve energy for work or pleasure also conserved. Let your dentist put your name on his list of patients for periodical prophylaxis, with

a full understanding of the principles involved. When you are in possession of the facts regarding the advantages of periodical prophylaxis by the dentist as outlined in this article, you are in position to apply the logic of it for yourself.

Efficiency Dentistry by Zero System through p e r i o d i c a l prophylaxis by your dentist is your tooth insurance. Efficiency Dentistry decay-proofs y o u r teeth. Decay-proof your teeth now so you will not have a "toothless day."

DENTISTRY AS A FACTOR IN INDUSTRIAL CORPORATIONS

When requested to make a statement of the advantage of dentistry to industry I am pleased to comply with the request, for it encourages me to believe the intimate relationship of health and good teeth is beginning to be realized as it should. At least there is an inclination to hear the argument and allow the logic to work its own conclusion. For this opportunity I thank the editor of the *Keystone* for his consideration and kind request.

Everybody now knows that the United States Government does not accept a soldier until his teeth are put in order. For this

there is a reason. Through the experience of the American dental profession during the past fifty years every case of decay has shown that had it been taken at the start or shortly afterward the tooth could have been saved or at least a large cavity to be filled or an artificial tooth crown would not have been necessary. This experience also has shown that during the period between starting of decay and the final painful aching of the tooth that a gradually increasing sapping of the patient's energy has taken place amounting all the way from lassitude to debility. On arrival of the aching of the tooth of course the patient then goes to a dentist, feeling his duty to himself well attended to because he went immediately upon noticing

the pain. However, the fact is that the dentist says, "Why didn't you come six months ago? I could have saved that tooth for you but now it has to come out."

To prevent decay people must go to the dentist at least twice a year to have their teeth examined and have the decay stopped. Small decays discovered at these periodical proloxises (or tooth cleanings) are attended to by your dentist by small fillings. Thus instead of large fillings or artificial crowns and artificial teeth the patient has small fillings or very often no fillings at all.

This system of periodical prophylaxis we have called the Zero System of preventative dentistry. This is the system instituted by the United States

Government. To start it off the teeth have to be put in perfect condition (if not already so) and thereafter by periodical examination by the dentist are kept in perfect condition. The names of the men are put on a card index system and periodically called to the dental office for the prophylaxis. In private life the Zero System should be carried out by taking yourself to your dentist.

United States corporations have for many years been interested in welfare work for their operatives and office force having used one or all of the following plans: Recreation room, medical office, reading rooms, roof gardens, gymnasiums, baseball clubs, billiard rooms, bath houses, summer outings, hos-

pitals, have besides provided entertainments, business talks, salesmen's talks, shop procedure lectures, in fact most everything but dentistry. Dentistry has been left to the individual and as stated above not until the pain announced that the decay had reached the nerve pulp and the tooth was gone has the dentist been consulted.

Industrial dentistry does for the individual more in maintaining equilibrium of nerve force than many of the above mentioned already tried methods of welfare work. By having the entire force of the men and women in a factory or works card indexed the industrial dentist calls each one into the industrial dental office, examines the teeth, cleans them, gives im-

mediate necessary treatment, notes on a card (duplicate of which he files) the work necessary to place the teeth in good order, and requests that the patient have the work done by his or her family dentist. This being a provision of the corporation to conserve the energy of the personnel of their force both for their (the patients') own good and for the good of the corporation. The ultimate time saved the patient counts much toward the cost of having the work done and the efficiency produced thereby amply repays the corporation for the outlay in the increased output. There is no absence on account of aching teeth under the Zero System. There is no lassitude or feverish conditions due to decaying teeth which the

patients think is caused by something else.

When the principle of prevention of decay is thoroughly thought out and the time that is saved both operative and corporation by this smooth running system, the welfare value of the Zero System of preventive dentistry will be classed at the head of the list. In fact, it enables the operatives not only to better attend to their work but also enables them to better enjoy your more pleasureable welfare features. One salient feature of the system of examination, inasmuch as one doesn't know just when the call to the office is coming, the addiction to stimulants and other excesses of human kind are subject to moderation, in fact, to better surveillance.

The industrial dentist is generally a regular practitioner who undertakes to take care of the work during certain days of the week, together with his regular private practice work. In large corporations where several thousand are employed there is enough work to keep one dentist busy all the year round.

In conclusion industrial dentistry is similar to army dentistry on a smaller scale, and similar to taking yourself to the dentist periodically on a larger scale. It is a new way for corporations to show their attention to the human element within its bounds and another (heretofore omitted) method of doing its welfare work.

PRESERVATION OF THE TEETH BY THE INDUSTRIAL SYSTEM

You might possibly say, "What has dentistry to do with our corporation? We have done very well without welfare work in the dentistry line; why not leave the matter to the individual person?" This is all very well if the individual knows about preventative dentistry and knows enough about the subject to go periodically to his dentist to prevent the decay that is continually starting in the teeth. If he knows that all household and personal efforts to prevent decay are only partially effectual and that in the long run he will have to visit the dentist he is in a fair way to accept the

principle of preventative dentistry, or zero system as we call it, and go to the dentist in time to save his teeth. In this article the writer does not intend to go into the systematic conditions which are adverse to human efficiency that are directly traceable to decaying teeth. You may have already some knowledge of them. The idea of the corporation is to develop the highest efficiency of the operative force just the same as it is the object of Uncle Sam to develop the highest efficiency of the army and navy.

The object of this article is to impress upon the reader that by the simple system of seeing his dentist at least two times a year he can have his natural teeth for his old age and be of full energy

so far as his teeth are concerned all the time. Industrially the installation of a dental clinic means that the care of the operatives' teeth will be popularized and that everyone shall know that it is not necessary to lose their teeth if they go to their dentist. The care of the teeth is fast becoming a community interest, for it has been demonstrated that when left to the individual preventative dentistry is not carried out as it should be. Why does the United States Government require every recruit for the army or navy or aviation corps to have his teeth put in good prophylactic condition? It is because once the work in the mouth is brought up to the health mark the army or navy dentist can keep them in

tooth health by the periodical prophylaxis at certain periods.

A card index system is kept of each member of a company or crew and they are called periodically for the tooth prophylaxis. This same system with its advantage of personal efficiency is utilized in forty-two industrial corporations in the United States today and the number is growing as fast as executives learn of the advantage the system is to those already using it. There has been great publicity given to the subject of tree dentistry, as all Kreolite readers know, how the forester noticing decay in the beautiful trees marks them for attention and along comes the tree dentist to make his filling of plaster to keep out the atmosphere and stop

the decay, thus restoring the wasting energy of the tree and perpetuating its life. Human preventative dentistry is very similar, especially army and navy and industrial dentistry; for everyone is called to the dental chair, the decay discovered and the small necessary fillings made. In private life, however, the tendency is to wait for the aching tooth, then, of course, you know it is time to go. However, then it is too late, for the life of the tooth is gone. The pain is the dying tooth, not the announcement that it is time to go to the dentist to save it.

There are many features of this subject which corporations can consider when planning their welfare work. Corporations have the welfare of their force at

heart and have spent large sums in medical hospitals, recreation rooms, gymnasiums, summer outings, picnics, lectures of all kinds, but have with few exceptions overlooked preventative dentistry altogether.

The writer has found a most attentive ear to this subject of industrial dentistry and to preventative dentistry individually, for it enables one to understand the reason which has actuated the Government and the industrial corporations who have already instituted this system.

ANOTHER PHASE OF INDUSTRIAL DENTISTRY

As a minute writer on the subject of preservation of the teeth and its ultimate relationship to public health I look upon the field of industry as one of the first to derive a substantial benefit from preventative dentistry. The dental profession has as its primary purpose the preservation of the public health so far as it relates to the teeth, and the relationship is beginning to be better and easier understood. In a nutshell the argument is that if you will have your dentist examine your teeth and detect the small cavities of decay and have small fillings stop the decay, you will preserve the teeth. The United States Gov-

ernment has adopted this program of preventative dentistry and all soldiers have their teeth examined and put in good order before being allowed to enlist. The reason for this is that everybody, unless they have just recently been to a dentist, has the small cavities indicating the start of decay, and the gradual increase of the decaying process de-energizes the patient and destroys the tooth until the tooth reaches the aching point. Unless you understand that you can intercept this decay by a visit to your dentist, not realizing there is decay, for it doesn't ache or pain you for from six to nine months, you unconsciously wait until it does ache, which it will. But then it is too late and you have to lose the tooth or have

a large crown or very large filling with sometimes devitalized nerve.

The Government dentists have a card index list of all soldiers in their camp and periodically examine each patient and make the small fillings if any are needed. By this periodical, at least two times a year, examination, the decay is discovered long before it reaches the aching point and of course the teeth are kept in fine health and the energy of the patient is at full strength so far as the teeth are concerned. Industrially this same principle which we call the Zero System is applied by the industrial dentist who is appointed by the management of a corporation to conserve the tooth health of the

people within its jurisdiction, the operative force.

Industrial dentistry is a feature of welfare work which corporations have with few exceptions so far entirely overlooked, but it is hoped they will soon realize the value it has for maintaining efficiency and good health among the operatives. Many forms of welfare work have been undertaken by corporations, including hospital medical rooms, rest rooms, reading and recreation parlors, roof gardens, billiard halls, summer outings, baseball, most everything but dentistry; this with a few exceptions, for now there are a number of corporations which are carrying on the Zero System of preventative dentistry with great success.

If the movement toward preservation of dental health is to succeed it will take the united effort of the whole nation with a dissemination of the simple principle of incepting the decay before the total damage of the tooth takes place. To see that this is done and that the natural efficiency of the soldier is preserved the United States Government as stated already has started the practice of periodical examinations of the teeth. Industrially the same thing can be done, it being for the benefit of the patient as well as for the corporation. Under this system there is no loss of time on account of lack of energy due to painful teeth, there is no facial neuralgia, there is no loss of time which under the old system

of waiting for the pain while the tooth was being extracted, large fillings, besides plates, etc., were being made, besides the patients have their natural teeth. What better system could there be? At present those who do not understand preventative dentistry think they are all right and that there is plenty of time to save the tooth if they go to the dentist as soon as it aches, but alas, this is wrong. The tooth only aches when it is too late. The only way to catch this, as stated before, is by periodical prophylaxis. At first I am continually met with the opposition, "What has this to do with our business?" I can only say, that if tried you will find that you will class the Zero System of preventative dentistry industrially

ahead of your other welfare features, and besides, it helps all involved to better apply their energies to both their work and your more pleasurable recreational welfare programs.

HOW THE IRON INDUSTRY IS BENEFITED BY PREVENTATIVE DENTISTRY

It has been shown in many ways how good teeth benefit the individual and on the principle that what benefits the individual benefits all alike, it can be shown how preventative dentistry benefits a whole organization. Welfare work within a corporation has as its prime motive the improvement of the health of the operatives with a result of increasing human efficiency and bringing up the force to its normal strength. A decaying tooth will not ache until it is so far gone that it is impossible to save it or nearly so at any rate. To detect the decay the examination has to be performed by a

dentist. Decay devitalizes the patient in proportion as the decay increases yet the patient does not realize his condition is due to a tooth. This is demonstrated in every factory where a dental clinic has been installed. Without going into the disastrous conditions which follow as a result of not detecting the decay, it is the object of this article to only point out how easily the de-energizing influence of decay can be prevented. The installation of a dental outfit and the employment of a dentist brings the corporation up to the status of taking a hand in directing the maintenance of human energy which is so important in any enterprise. It becomes a benefit to the individual and remains as a benefit to the indus-

trial corporation. The industrial dentist card indexes the men and women who are to come under his care and calls them in to the clinic twice a year. On the start he finds various amounts of dental work necessary to put the set of teeth of each individual in prophylactic condition. This he indicates on duplicate cards giving the original to the patient and requesting that the family dentist attend to the work and when it is finished that the patient report and be checked in. This is the same as the recruit in the army does. After this initial work the semi-annual preventative prophylaxis takes care of the case and decay is stopped. You will see that there is no allowing a case of decay to reach the ach-

ing point because it takes six to nine months or a year to do that and the periodical prophylaxis catches this. Industrial dentistry takes the matter of going to the dentist out of the volition of the patient and runs it according to system. If the laity did this voluntarily which a few have learned to do they have the same high energy that results from industrial application of the principle. A large company in the iron trade, The R. K. Le Blond Machine Tool Co., is one of the fifty odd corporations in the United States which at present operate a dental clinic along the lines above explained. The installation of this work is a welfare feature to the workers and a benefit to the company in uniform attendance to labor and

maintenance of good health which is essential thereto. Many people understand the simple principle of detection of decay without applying it to their teeth and it is for this reason that the corporation being advised and having learned of this do the detecting for them. Individuals will protect iron from the effects of rust and show concern for this devastating force because it is in plain sight but will overlook a similar destructive force operating on their teeth because they can not see it or feel it. When one grasps the fundamental truths of this subject one can follow the logic to the conclusion for oneself.

Industrially applied preventative dentistry is a success. The new Government plant at Nitro,

W. Va., is equipped with a dental outfit for preventative dentistry. When industries of this calibre adopt the Zero System of preventative dentistry it is because there is really something in it for the betterment of human energy and efficiency.

ECONOMICS AND PHILOSOPHY OF INDUSTRIAL DENTISTRY

Scientific Dental Citation *versus* Volitional Tooth Care

In handing over a valuable article with the expression, "I trust you will take good care of this," the answer generally is, "Yes, indeed, I will take care of it just the same as if it were my own." Of course the party means well, but does "to take care of the valuable article just the same as if it were their own" mean that they will take care of it as they should? We have daily examples of this "taking care." The teeth are put in our care for us to take care of and we must

take care of them because they are our own. The fact remains, however, the dentist can take care of them better than we can. We can let the dentist take care of them so our part in the care taking is permitting the dentist to do it. When we have learned this, institution and corporation dentistry can consider their work done.

Until public institutions and corporations became interested in systematizing the care of the teeth for their people the practice of individual care of the teeth was volitional and entirely "as if they were their own."

With the exception of a small percentage who from good advice follow preventative dentistry methods by seeing their dentist periodically the people are

permitting their teeth to decay and eventually they will be wearing false teeth.

The installation by a corporation of a dental clinic and calling operatives for dental examination stops this volitional system and substitutes dental citation to the family dentist. The corporation dentist is an expert in diagnosis and prophylaxis besides being a good all around practitioner and in his care the people within the jurisdiction of the corporation are kept in good hands and given good dental direction. It is identically the same as preventative medicine and good advice in the medical line which the corporation physician dispenses.

We have termed the dental plan of corporation dentistry the

Zero System because it reduces the loss of the teeth to a minimum, zero in many cases. Also because it reduces the large fillings, restorations, crowns and bridge work, and false plates to a minimum, also zero in many cases. We have been asked what this new "freezing" system of dentistry is, but of course the one who asked that question did not grasp the broad scope of this subject. We have also been asked if corporation dentistry is dentistry on a "wholesale" plan. Neither does this question show a grasp of the meaning of the subject. Systematization of the care of the teeth means caring for them in a scientific way by having periodical advice from your dentist about them. Compare the health of a community

run on a scientific basis and system with a community run on the volitional basis, run as each individual feels about it, and you have the argument. For the dental profession, institutional and corporation dentistry will act as a pulmotor of dentistry. For the people cared for the work done will preserve and maintain health, cure troubles formerly considered due to unknown and untraceable causes, and maintain efficiency of nerve force. For the corporation it becomes its most potent efficiency producer and provides a mutual interest and aid work from which every worker derives a benefit.

One noticeable thing, noticeable by its absence, is the lack of examination of the teeth and mouth by the examining physi-

cian for life insurance. The physician examines and measures everything else but passes up the teeth, when the teeth have as much to do with the longevity of the race as other parts that are examined have.

In the light of modern knowledge on this subject it becomes a necessity to place these facilities for tooth care before all who have not been warned or advised how much they can do for themselves by seeing their dentist. As the corporation is interested in the health of its operatives it is ready, naturally, learning as they have of this subject, for an adoption of another efficiency plan. It is with this truth guiding the pen that these pamphlets have been written.

Public institutions, where the inmates live from year to year, should all have dentists and run a Zero System for the inmates, for otherwise the tooth decay is considerable and the inmates in such, as insane asylums, have little or no inclination to voluntarily go to a dentist. It is almost as bad for people having volition not to use it. This is where the corporation dentist becomes a director of tooth care by suggestion.

If of our own volition we go periodically, say two times a year, to our family dentist, we are then following preventative dentistry and the Zero System. It is for the thousands who do not yet understand the benefits they will derive from good dentistry that institutional and cor-

poration system dentistry is advocated. With the corporation it becomes an efficiency proposition inasmuch as the better the nerve force, the fewer hours lost from industry, the more stable strength of operatives, the better it is for both employe and employer. The benefits are mutual. The pride of the wide awake corporation is to be conscious that it is operating along lines of modern enlightenment for the best interest of its products, its success and the people whose labor is contributory thereto. This stimulates a pride in the personnel of the corporation, executives and operatives alike, and permits an easy adoption of any system of improvement when the obvious advantages are thoroughly understood.

It is with the idea of calling attention to human benefits of preventative dentistry that its advantages to industry have been pointed out. It is to call attention to the advantages to industry that we have pointed out the human benefits of preventative dentistry.

REASONS FOR CORPORATION DENTISTRY

Not until the war was declared against the Central Powers and the enlistment of our United States Army to co-operate with the allies started, was the intimate relationship between tooth health and human efficiency given popular emphasis. This fact has been well known, however, by the American Dental Profession, as it is one of the salient and definitely demonstrated facts evolved from experience in dental practice over the last fifty years.

One of the requirements of the army and navy recruit is that the teeth should be in good condition. In order that all applicants for military and naval

positions could speedily qualify with good teeth the dentists of the United States formed the Preparedness League of American Dentists, the object of the League being to do all dentistry without charge for bona fide recruits so that they can pass dental requirements. In every city and town this has been done and is still being done by the dentists. The object of bringing all teeth up to normal is that with tooth health the general health can be brought up to normal and kept so by periodical prophylaxis.

Prophylaxis means detection of decay. As decay is constantly starting in spite of all personal efforts to prevent it a periodical examination of the teeth is necessary to catch the

decay before it goes very far and does much damage to a tooth. People generally believe they are doing their duty if they go to their dentist as soon as a tooth aches, but then it is too late. An aching tooth is indication that the tooth is very much decayed and possibly will be lost, and not an indication that it is time to go to the dentist to have it saved. To prevent decay reaching the aching point periodical examination by a dentist is necessary. With the Army and Navy men after enlistment with good teeth they are kept so by the periodical prophylaxis by Army and Navy Dentists. Dentistry is an essential profession and the dental manufacture and supply business is essential business. This

brings care of the teeth prominently before the people as an important personal efficiency work.

Business is constantly studying methods of efficiency and system. These two terms are intimately related. You can not get efficiency without system and system is no use without efficiency. It is for this reason that the Government in desiring to operate a system overlooks no essential aid to efficiency.

Corporation management looks for these same points, efficiency to carry out a system and a system by which to obtain efficiency. These terms begin with individual efficiency and through system result in unit efficiency. Care of the details result in success of the whole.

With the above preliminary understanding and knowledge of the relationship of tooth health to personal health it becomes as much the object of corporation management to direct the care of operatives' teeth as it becomes necessary to install a new system of manufacture upon invention of new and labor saving devices or of new systems of accounting to supersede a system that has less advantages. Under war conditions with the lessening number of available operatives it becomes more than ever an important point to look to the personal efficiency and health of those who are to carry out the corporation system.

Industrial Dentistry is strictly periodical prophylaxis and periodical examination of the teeth

and recommending what necessary work that is found to be done by the family dentist. By this step the corporation assumes the directorship of the care of the teeth recommending through its corporation dentist the work necessary, and the care of the teeth is kept in good hands nothing more or less being recommended as necessary than what the competent dentist deems advisable. All decay is caught before it does any damage. There is no loss of time from work due to tooth ache, no excuse for dental troubles or other maladies that are due to dental neglect.

Many inspections of machinery and apparatus are carried on by factories periodically to prevent damage should some un-

ascertained defect go undiscovered. Why not do the same with ourselves? Those of us who do know about preventative dentistry do attend to this periodical dental examination by going ourselves to our dentist, but think of the vastly superior number of people who do not yet know about it. We need them for their work in their various trades and we need them ablebodied and efficient. To help them to do so is therefore an important feature of corporation management.

CONCERNING DENTAL CLINICS IN INDUSTRIAL CORPORATIONS

The inauguration of the use of dentistry to economize time in manufacturing companies has set industrial managers on a new feature of efficiency welfare work. During a very recent visit to some of the important industrials doing war work the writer was very favorably impressed with the idea of dentistry as a factor in the manufacturing corporations. While being shown through the Dayton Wright Airplane Company, Mr. William Byrne, the head information and employment manager, drew particular attention to the dental office that the com-

pany had equipped, at the Moraine Village works. Dr. H. B. Millhoff, the dental clinician, showed some interesting statistics which he had recorded since the starting of the dental department, showing a saving to the company since January 1, 1918, to June 30, 1918, of 21,031 hours. Dr. Millhoff said that an average of 4,000 men and women were engaged in work at the Moraine plant and that the amount of tooth trouble, which would otherwise hinder the full efficiency of the company's force, had been cared for by him, with a net saving of these 21,031 hours of time. The morning of my visit to the Airplane works, Dr. Millhoff had attended thirty-five cases of toothache and toothtitis. The novelty of this whole subject almost made me forget

that I was to be shown through the most complete and most important airplane works in the world, but Mr. Byrne permitted me to jot down a few notes, and with a promise to return to the first aid clinic again I continued with the party to see the Liberty motors, and to be informed as to the use of ailerons, stabilizers, fuselages, tail skids, etc. But my mind wandered back to the fact that these hundreds of workers have tooth troubles and how wonderful it all was that the company had realized the saving of hours it meant to it by having a dentist on the ground at the plant. Mr. Byrne explained that the employees were periodically called for dental examination to detect decay, as this is the only way to prevent loss of the teeth, and Dr. Mill-

hoff further explained, after I had again returned to his office, where he was busy with the drill, that all of the new employees were given a dental examination and recommended to their family dentist for entrance dental work, as his work consisted only of prophylaxis and first aid work. As a plant six miles from town would necessitate a several hours trip to a down-town dentist to relieve a toothache, or treatment of an abscess, which sometimes requires daily care for a week, I readily could understand how much a saving of time it really meant to the company to have Dr. Millhoff there. Toothache is no longer an excuse for absence. The adding machines in the office I know receive their periodical inspection, and the machinery in all parts

of the plant has its periodical inspection too. Giving the periodical inspection to the human welfare shows that the institution is humane, as well as scientific and material. Our party was so interested in the subject of dentistry that Dr. Millhoff offered to give us some details of the afternoon clinic he conducts at the Dayton Metal Products Company, located about seven miles on the northeast side of the city of Dayton. At lunch with Dr. Millhoff, we learned that the dental profession considered the industrial field such an important one for its services as a conservation of health and energy for workers that at the Chicago meeting in August, of the American Dental Society, a branch is to be formed called the Industrial Dental Society,

consisting of the industrial dentists.

After lunch we visited the Dayton Metal Products Company and met Dr. E. H. Ewing, head surgeon, who praises very highly the results obtained for the company by Dr. Millhoff. He said the hours saved run 1,018 hours for May, and 2,471 hours for June, 1918. Dr. Millhoff told of one employee who had not been very well for a long time, and who was at intervals advised to stay at home on account of rheumatism. This necessitated a loss to the company of the amount of finished products he would have turned out had he been able to stay at his work. When this man's turn came for dental examination, Dr. Millhoff said, "Wait a minute, let me extract those abscessed

teeth." He slipped his forceps from the dental cabinet and with a few expert moves had four snags on the bracket table. The employee felt relieved at once and has not lost a day since, and his rheumatism is on the shelf. His praise of industrial dentistry is pronounced. Dr. Ewing said that there was enough dentistry in the plant to keep six dentists busy all the time, but at present only first-aid work and prophylaxis is being carried out, new men and women as well as old and regular employees being periodically examined. He added that the work had materially helped the better heart of the personnel of the employees and brought a closer community interest of the workers to their industry.

At the National Cash Register Company, that company renowned for its excellent and result-getting welfare work, we were agreeably met by the information clerk, who told us that the entire lower floor was open to visitors, and that we could attend the company lecture at 2:30 P. M. Among the first features we found was the dental department, with Dr. H. M. Brewer in charge as clinician. As he was busy with a patient, and had three more to see before his afternoon appointments were completed, we decided to hear the lecture and return. The lecture consisted of the combination of color illustrations and color movies, explained by a bright young man, who spoke in a clear, mellow voice, telling of the growth of the National Cash Register

Company, and the part its welfare work played in its great development. He also expressed with pride the recent new addition of the dental clinic which Dr. Brewer is in charge of, adding that the care of the teeth was now a recognized feature of the National Cash Register Welfare Department. Welfare work at the National Cash Register Company is a constructive educational course, teaching by kind hands the ways of physical and spiritual uplift and self-betterment. When we returned to Dr. Brewer's office he was just dismissing his last patient for the day and removing a pair of rubber gloves. He welcomed us to his sanctum, inviting us to look at the fine equipment and examine the display of orthodontic models showing defec-

tive teeth as he had found them during his experience. Dr. Brewer said that the National Cash Register Company had often considered dentistry as a feature of their welfare work and it finally decided to install the department with him in charge, for they had learned that the human energy depended much upon the upkeep of the teeth, and that they also now well understood the principle that by periodical prophylaxis the tooth decay can be detected and stopped, thus preventing the decay reaching the aching point, which results in the ultimate loss of the teeth. He explained that the company realized that education in the care of the teeth was as much a subject on which its employees should have instruction as the

other subjects on which it had already expended much effort.

Altogether, our day in these three industrials covered a multitude of interesting studies, among which the subject of dentistry as a feature in manufacturing corporations stands out as an indication of the progress industrials are making in recognition of sciences at first glance remotely connected with their work, but through the human element intimately and inseparably related to the finished product.

DENTISTRY IN THE FACTORY

The emphasis an observation receives, is the amount of importance you give it; or you might say, the importance a subject receives is the emphasis you yourself give it. If you have noticed the amount of time your factory was losing on account of excuse granted for leave to attend the dentist, and placed some importance upon the observation, it would naturally occur to you that some plan of conservation of this time lost, due to tooth troubles of your men, might be worked out. For a long time the solution of this problem has existed, but emphasis of its importance has been lacking. Now, however, when

the loss of hours is considered such an important item, its observation has become of sufficient importance to emphasize the latent solution of the condition. Dentistry in the factory is the answer. If you have a thousand employees and each one loses three hours a year on absence to take care of their teeth, you lose not only the pay for three thousand hours but the result of three thousand hours of work. The value of these hours in your finished product will much more than pay for dentistry in the factory. I am speaking now of dentistry in the factory as an investment and in no sense as a speculation. The object of this article is to open up the subject and give a few ideas and should not at all be

considered as all there is to the method.

By periodical examination of the teeth, say twice a year, the accrued decay is detected by the dentist and stopped, thus preventing the process continuing to the aching point, at which the nerve generally dies unless immediate dental attention is given. You see, the dentist gets the patient anyway; why not let him get the patient in time. In spite of all the tooth brushes and tooth pastes and all household attempts to stop decay it goes right on and the people are getting their false teeth for old age just the same, except those who have learned of the preventive action of periodical examination termed prophylaxis, meaning detection of decay.

If a worker in the factory cuts his finger he is not sent to some downtown surgeon. No, he is cited to the company's first aid room where you have a competent physician and surgeon or several of them. If a worker reports a toothache or says his limbs hurt him (for rheumatism is due to abscess of the teeth) you cite him to his family dentist wherever he is. Why is this? It is because emphasis has not until now been placed on the importance of having a dentist on the company pay-roll and at the factory. In the fifty companies which have installed dentistry as a factor in their first aid work a toothache is never reported after the prophylaxis system is running smoothly, for by the periodical examination, all decay and abscesses are discovered

by the dental clinician long before any maturity of the trouble is reached. Prophylaxis is something like weeding the garden to permit the flowers to grow, instead of permitting the weeds to gradually sap the life out of them. The object of dentistry in the factory is not primarily to do dentistry, but its object is to reduce the loss of time due to dental troubles. All work which is not within the scope of the clinician's duties are referred by him to the patient's family dentist. In this way the patient gets good dental advice and if he has to go to his family dentist after the clinician's first aid work, he goes on his own time at hours when his work does not demand his attention. With this explanation you can readily see that the factory with

a dental outfit and a dental clinician is not going to lose any time on important contracts on account of workers who have decayed and aching teeth. After the first examination by the clinician and the preliminary work by the family dentist, if any, there is no decay and no toothache because the prophylaxis takes care of this. It is exactly like the adding machine in the office which is examined and cleaned every six months by men sent from the factory that makes them. The periodical examinations disclose any wear or breakage that would, if allowed to continue, eventually result in the machine making mistakes in addition. Likewise the periodical examination of the teeth of operatives discloses decay that if

allowed to continue, will ultimately result in hours of absence. A factory prophylaxis only takes about fifteen minutes. The clinician has an indexed list of the employees and sends a messenger to the party wanted, giving time he is to report for examination.

From a point of hours saved by this system the dental welfare work pays for itself. In companies where the welfare work is from the educational point of view, it is as important to educate the employees in the care of their teeth as to educate them on any other subject. In companies in which athletics is the dominant feature of the welfare work it is important that the athlete have sound teeth that are free from decay lest he be de-energized by the sapping of

his energy, which is the action of a decaying tooth on the human system. If salesmanship is the welfare work of the company, what better address need one have than a fine set of natural teeth?

During a recent visit to several factories employing dentistry as a factor in their welfare work I learned some remarkable results derived from this source. The Dayton Wright Airplane Company was visited and I was shown the schedule which disclosed 21,031 hours saved the company since January 1, 1918. The Dayton Metal Products Company have operated their dental clinic nearly three months. They showed me their schedule which recorded 1,018 hours saved during May, and 2,471 hours saved during June of this year.

The National Cash Register Company had not considered time saved, as their program is from the educational point of view. However, they were sure that dentistry in their factory, through the teachings of their clinician, was showing results comparable with their other educational courses. At the Cincinnati Milling Machine Company, where they have been operating a dental clinic for over two years, the report showed that prophylaxis had brought a spirit of safety to the employees—that they were not going to be obliged to lose their pay on account of loss of time to have their teeth cared for. Besides, the company has saved many hours by the program. At the LeBlond Machine Tool Works a newly installed outfit was found and they

reported gratifying results as obtained for them by their clinician. All of these factories are at great distances from the downtown section, and such is the case nowadays in most all cities, as the factories are located in suburbs and outlying villages where they can obtain the necessary acreage for their large plants. War work and large important contracts, with time limits for delivery, increase the value of each hour and focus the attention on every method that can reduce the number of lost hours. It is with this in mind that I advocate dentistry as a factor in conservation of time in manufacturing corporations.

EVIDENCE OF THE VALUE OF PREVENTATIVE DENTISTRY TO INDUSTRIAL CORPORATIONS

In my work of presenting the subject of Preventative Dentistry to manufacturing corporations, various industrial and trade magazines have accepted my articles, believing in the fundamental benefits of good dental advice to humanity, although the subject of dentistry is foreign to the general subject and class of trade to which their magazines are devoted. The regular dental publications which are read mostly, and I might say almost exclusively, by the dental profession and trade have been filled for years with the subject of Preventative Dentistry, and

the wish has often been expressed that its benefits to public health be brought to the knowledge of the public.

Industrial managers, all over the country are interested in the subject, and you will find it as one of the principal items of welfare work as outlined by the National Safety Council, of which Dr. L. A. Shoudy, Chief Surgeon, Bethlehem Steel Company, South Bethlehem, Pennsylvania, is chairman.

In reply to my questionnaire to various companies using the dental service system the following replies have been received:

The Joseph & Feiss Co., Cleveland, say:

> While it is difficult to trace the definite results of benefit obtained from this work we feel convinced after six years' experience that it should be classed along

with medicine and surgery in first aid work.

I am not able to answer questions as to the relative importance of dentistry and medicine. We are convinced without drawing any comparison that dentistry, medicine and eye work form an essential and profitable part of our work and are all of them a tremendous aid in the development of steady and efficient men and women.

Sincerely yours,

EJ :FY ERNEST JOSEPH.

ARMOUR & Co., Chicago, say:

We would advise you that we have had our dental work going such a short time, we are unable to draw any conclusions as to the effect of this work upon efficiency, lost time or quality of finished product. We feel that, in principle, this department should have an influence on all of these items, but as yet, we have been unable to ascertain just what it is. The results of the Dental Department are more or less intangible and are similar to welfare and medical work,—in that they increase the morale and loyalty and efficiency of employees, all of which are extremely beneficial to any employer of labor.

It has been our aim, for the present at least, to make our Dental Department more educational than anything else, and if we succeed in teaching our people the value of caring for their teeth, we shall feel that the department has been a success. We can say, confidently that it is our belief that the Dental Department is an institution with us which will remain.

Yours very truly,

ARMOUR & CO.,

HGE:GA *H. G. Ellerd.*

THE DAYTON METAL PRODUCTS CO., Dayton, say:

It encourages us to know that many other large industries are interested in this comparatively new branch of welfare work, which is of such vital importance at this time. They have awakened to the fact that there is a very close connection between Mouth Infection and Systemic Diseases, that good teeth means good health, and good health means efficiency.

There never was a time in the history of our country when it was so necessary to bend every effort toward the maintenance of human efficiency than at present.

This work has saved us 21,031 hours so far this year.

Yours very truly,

THE DAYTON METAL PRODUCTS CO.,

MH. *Dr. H. B. Millhoff,* Clinician.

THE EMPORIUM, San Francisco, say:

Our Clinic is open daily from 9 to 12 and we handle on an average, 200 cases each month. We find that our employees are very eager to take advantage of the opportunity of having good work done, with the least expenditure of time and effort.

It certainly ranks with medicine and surgery as a welfare feature and we find that the two branches work splendidly together. We have arranged to have all appointments made during store time without any deduction for the time lost, and we are confident that our employees are not abusing this privilege, but are grateful not only for the temporary relief but for the permanent treatment which our dentist gives.

Yours very truly,

THE EMPORIUM,

Miss Leslie Wilde,

LW:EHT. Assistant Welfare Director.

KABO CORSET CO., Chicago, say:

We are pleased to state we consider dentistry in factories as of more benefit than either medicine or surgery. The results of dentistry in our factory have in many ways exceeded our expectations.

Dentistry in our factory has saved our employees, as well as ourselves, over 2,000 hours in the past six months, time which would have been counted as lost working time, as well as protecting said employees from the clutches of unscrupulous advertisers and incompetent practitioners. It has increased production in proportion to working hours saved.

The preventative features of dentistry are not apparent to everyone, such as medicine and surgery is, but it is these preventative features which lead us to express the opinion that dentistry exceeds in benefit and importance to either medicine or surgery.

We have one instance in which we are confident a valuable employee was saved from insanity and a great many cases where pyorrhea was prevented, thereby saving the employee and ourselves much valuable time for work that would have eventually been lost.

We do not hesitate in saying that we consider dentistry, and especially preventative dentistry, as of equal import-

ance to medicine and surgery as welfare features in any corporation.

Yours very truly,
KABO CORSET COMPANY,
By *Frederick H. Mill,*
Mgr. Ind. Serv. Dept.

LORD & TAYLOR, New York, say:

Our dental clinic is operated under the supervision of the Department of Instruction and Training. You may deduct from this that it is a part of the educational scheme. We compel an oral, as well as a physical examination, of all those entering our employ, for the purpose of doing preventative work. The clinic is still in an experimental stage and we are not prepared to give statistics.

Yours very truly,
ISABELLA BRANDOW,
Department of Instructions
and Training.

THE T. EATON CO., LIMITED, Toronto, say:

We find that the most apparent result of dentistry in our establishment is the emergency work which usually retains the individual at work who would otherwise have to have treatment outside and

thereby lose from an hour or two, to half a day, or perhaps longer.

The work of our dentist is confined to giving relief in cases of toothache, giving advice, making examinations, charts, and when necessary, making X-Ray plates for employees to take to their own dentist, and the cleaning of teeth.

We consider that it increases efficiency inasmuch as an improved physical condition is bound to have this effect.

It has been of undoubted benefit to numbers of our employees, whose appreciation is evidenced by the numbers who take advantage of it.

Yours truly,

THE T. EATON CO., LIMITED,

R. Per *P. L. Reid.*

THE FORD MOTOR CO., Detroit, say:

Will state that the dental work done at this plant so far has been very limited. We have had one dentist for the past year who devotes his time exclusively to dental work called for through injuries received by employees while at work, and to the inspection given to employees who come under our observation requiring dental attention.

It is impossible to definitely estimate the good done by this department, but to date we have no cause to regret the in-

stallation of the dental department, and contemplate increasing its scope in the future.

Respectfully,

J. E. MEAD,

JEM:HER. Chief Surgeon.

H. J. HEINZ Co., Pittsburg, say:

We can not give specific answers to your questions, because none of our welfare features was ever undertaken with the conscious purpose of improving our output or our profits. When we add any new feature for the benefit of employees, the determining factor is whether the employees will be interested and will take advantage. Consequently, we have never figured the dollars and cents value of our Dental Department, or made any observation as to reduction of lost time.

The department is in charge of a graduate, experienced dentist, who does all sorts of dental work except bridgework. This work is done on the Company's time and at the Company's expense. We do feel, however, that more important than dental surgery is instruction in oral hygiene, and so our man always teaches his patients the use of the toothbrush and of dentifrices. This element of the work extends beyond the factory, for the em-

ployees carry into their homes and to the neighborhood the gospel of the toothbrush.

Yours very truly,

H. J. HEINZ COMPANY,

CFO:M By *C. F. Ohliger.*

THE NARROW FABRIC CO., Reading, say:

It is, of course, exceedingly difficult to measure the benefits derived from a department of this kind. However, we do know that we are experiencing a gradual and consistent increase in the personal efficiency of our employees, in the decrease in illness, absenteeism, and other evils which decrease production.

In most instances, we have arranged for a regular semi-annual examination of the teeth of our employees. In this way the cavities are discovered before they have progressed very far. Inasmuch as this results, of course, in the preservation of the natural teeth, the beneficial effects in the personal health and efficiency of the employee inevitably follow.

We can say, without reservation, that the results fully equal our expectations; that it has reduced the number of hours lost through illness, and has, consequently, increased to that extent, the output of the mill. While, of course, dentistry

is not quite as vitally needed to take care of accident cases or persons suffering from acute illnesses, nevertheless, we believe that in the long run, preventative dentistry is as important as medicine, and that it frequently prevents the necessity of resorting to the latter.

Respectfully,

THE NARROW FABRIC COMPANY,

JEK:EVF *J. E. Kissinger.*

THE NATIONAL CASH REGISTER CO., Dayton, say:

We realize that it has been of material benefit to those employees who have received treatment, and without a doubt is as necessary as the medical treatment.

Yours truly,

W. A. PEARSON,

RNH:CW Welfare Dept.

D. H. HOLMES CO., LTD., New Orleans, say:

Our dentist, Dr. J. S. Hull, spends two hours, from 8:30 to 10:30 a. m., with us. Every employee knows that he or she is welcome to dental service. However, it is the duty of the welfare secretary to see that attention is given to the teeth whether the store dentist is used or not,

and to urge the employees to keep their appointments with the dentist.

Even at the beginning the response on the part of the employees was gratifying, but it was necessary to urge in many cases that the appointment be kept. We do not insist that our dentist be used, but we do insist that care be taken of the teeth.

Our reports show that 72 per cent. of our employees make use of our dentist. Most of the work has been general filling and treatment. The dentist found many bad cases of neglect, but on the whole we were surprised at the prompt response which met our dental offer. The equipping of our dental office was our greatest expense.

We pay for all materials used and we find that we are more than repaid. We consider that most diseases are enhanced, if not produced, by bad teeth. Our general health has improved and we lay a great part of this improvement at the door of the dentist's office.

The instructing in dental hygiene and the advice about toothbrushes, etc., is left entirely to the dentist, although throughout the year at least three lectures on the teeth have been given for the benefit of all the employees in the store.

Our dentist's report for the last six months is most gratifying and shows that

the teeth of a large per cent. of our nine hundred employees are being examined and properly attended to semi-annually.

We are very happy to tell you of this work.

Very truly yours,

D. H. Holmes Co., Ltd.

Per *Lois Janvier,*

LJ :AD. Welfare Secretary.

The fire insurance business has recognized the value of periodical inspection in the reduction of fires. This has increased the insurance business and reduced the number of fires, and reduced the liability to fires. Instead of allowing the fire conditions to run down, producing greater and greater liability of fire and consequent increase of rate for carrying the risk, the companies make at their periodical examination of premises recommendations of improvements and clean-up that will reduce the fire risk;

also the fire liability; also all new building has to conform to certain requirements for fire proofing. The insurance companies have realized that their work in reimbursing fire losses on insured property, also consists in preventing fires as far as is possible. Welfare work is very similar. Instead of waiting to repair the damage which certain conditions are gradually bringing about, modern welfare workers realize the value of preventing the damage before it comes and of intercepting the process.

As a brief summary of the dental service plan from which the above-mentioned companies are deriving such good results, let me conclude by outlining their system. Dental troubles fall into a class that can be readily

prevented if caught in time, but are sure to accrue if not detected. Dental prevention consists of having the dentist examine each patient periodically, about twice a year, and note on a chart the condition of each tooth, directing the patients to their family dentist for needed work, if any, and checking the work when it is done. That is, seeing that the work is done. The dentist does first aid work, relieves toothache, performs treatment that would require numerous trips to the family dentist and consequent loss of operative time, prevents excuses for toothache. There are many systemic conditions in the duration of which operatives lack pep, which are due to conditions of the teeth. As operatives are not aware of this cause, their dentist is not ordinarily

brought in to consultation until too late. The industrial plan of having the industrial clinician call in the patient as a welfare feature of the establishment has made it possible to correct these systemic conditions before doing great damage, and the result has been greater regularity in attendance, better health, greater number of operating hours given to employment. As most companies have adopted dentistry from an educational standpoint, they have not kept data on percentages of increase derived from that source, but you can see from the above expressions in their letters what their views are after use of the system. They class the results as intangible because what Preventative Dentistry prevents, never happens. It is like the fire that is prevented by cer-

tain recommendations and precautions, the prevented loss of which is impossible to estimate. The only difference is that in Preventative Dentistry, the thing at stake is health and efficiency.

Dentistry in the factory is placing at the disposal of the operatives information and experience of the dental profession collected over the past fifty years. Of course there are things about it that the patient would not know, but the welfare department offers it gratis with the assurance that it is the right thing to do, knowing as it does, the benefits the operatives will derive from it. Corporation dentistry is a growing subject, and after reflecting what might have been if you yourself have lost some teeth which some prevention would have saved, the

subject will take hold and leave you convinced that it is a good thing. Preventative Dentistry produces industrial health.

CORPORATION DENTAL SERVICE

During the war while all available time for essential manufacturing was needed and all operatives were needed in good physical condition, particular attention was paid by welfare committees of the various war industries in studying the upkeep of human energy. The United States Army and Navy plan was followed as closely as possible, and this resulted in the establishment of dental prophylaxis (means detection of decay), together with the regular medical attention given operatives. The human health and energy has an intimate relation to and dependence upon good teeth, more so than the majority

of people realize, and it is for this reason that the medical staff of the United States Army and Navy required dental preparation of recruits before entering the service, and afterward required periodical attendance at the Army and Navy dental offices for dental upkeep, called prophylaxis. It was found that by preventing decay, which is continually starting, the teeth could be saved, the nutrition maintained, systemic diseases avoided, as the teeth and gums are one of the three foci of infection, the other two being the nose and throat or tonsils. Manufacturing companies which use this system find that at least three hours a year is saved on every operative, and in some factories the number of hours is much greater. This means three

thousand hours if one thousand operatives are employed. One company making air planes saved 21,031 hours in six months operating four thousand people. Factories today are generally far out of the city, and a trip to the dentist means loss of much time. To have a dentist for several hours each week, at stated times, at the factory, eliminates this waste of time, keeps the operatives at their work, preserves the health, and makes excuse for tooth troubles unnecessary.

Only a superficial understanding of the relation of improper teeth to systemic disorders, or as it is technically stated, Oral Septis in its Relation to Systemic Disease, is necessary to appreciate what dental service in manufacturing corporations can do

toward maintaining efficiency of workers, both clerical and technical. Welfare programs have always included medical service and rest rooms, athletics, libraries, social meetings, wholesome noon lunches. Some plants have gone into summer picnics, boat rides, roof gardens and billiard rooms. All these have their place. In dentistry there is a practical benefit which is generally appreciated only when it is too late to derive the great good that it can render if it can only render it in time. Dental troubles fall into a class which can by prevention be entirely avoided. An aching tooth is notice that it is too late for a dentist to save it, not that it is time to go to the dentist to save it. It is for this reason that where people are called into a dental

room and a dentist makes an examination detecting the decay, if any, and making the then small filling, the tooth can be saved and the ache avoided. Not only this, but the health is conserved. While a tooth is decaying it does not ache, but absorbes energy from the system and poisons the blood, in both ways lowering the vitality of the patient. A great deal can be said right here, but only enough is possible in a short explanation of corporation dental service to start interest in this direction. Companies using dental attention in their welfare work report gratifying results of the work. There is a difference between doing dental work where work is needed and doing dental prevention. It is the dental prevention that interests the corporation dental clinician. He is not

there to put the teeth of operatives in order and do a a whole lot of bridge work and filling. His work is to indicate what work they need done and to advise them to have their family dentist do it, and see that it is done, checking it up when completed. After that the periodical upkeep by him will maintain tooth health. French and English factories took up this subject following the example of the French and English Armies, and have derived much good from it during the war. Some companies had the dental service in operation some years before the war. Here in the United States there are sixty-one corporations using dental service at the present time. Their lines of activity cover meat packing, cork, statistics, worsted, optical, telephone, milling machine,

toilet requisites, iron, coal, steel, ammunition, air planes, matches, women's wear, department stores, rubber tires, tooth brushes, automobile, rubber sundries, men's clothing, pickles, preserves, harvesting machinery, life insurance, mail order houses, abattoir, cash registers and dental instruments and equipment.

Corporations installing dental service for operatives are taking a step for economy in manufacturing, conservancy of manufacturing hours, maintenance of health of operatives. They are filling a gap that exists without it, as medical service alone does not remove the cause of the multitudinous systemic disorders which are due to tooth neglect.

Corporations which have installed dental service find that it increases the attendance at work,

increases the output by the amount of hours saved, maintains health, improves mental alertness, raises the character, rounds out their welfare work, helps their educational programs, makes their recreative work more consistent. For these reasons industrial managers and welfare experts are paying more attention to the subject of corporation dental service.

TOOTH TROUBLES AND THEIR RELATION TO SYSTEMIC TROUBLES

Value of Dental Service

The mouth is one of the three points at which systemic disease has its inception. The other two are the tonsils and the nasal cavity. In considering the decay of a tooth or the abscess at the base of a devitalized tooth or the pyorrhea condition of the gums, the laity lose sight of the intimate relationship of these conditions to other parts of the body. This is due to the lack of public information on this subject and also to the painless or relatively painless condition of the teeth and gums, when in this condition, in contrast to the pain and inconven-

ience experienced in other parts of the body during the time the exciting cause is allowed to run undetected.

Dr. Duke, of Kansas City, Missouri, has made a long series of clinical observations on this subject, and reports presence of streptococci bacteria in the blood of people having abscessed teeth. These bacteria affect the heart and are known to be the bacteria of joint inflammation—rheumatism. Physicians have recognized that these same conditions are brought on by septic formation in the tonsils. The tonsils have had their share of investigation, and the operation of removal of the tonsils has become a necessary and popular one wherever the tonsils can not be made normal by treatment. The tonsils have also been found to be a cause of

deafness. Likewise the tooth poison from the abscess going directly into the blood produces deafness, and in some cases defective eyesight. The streptococci take up their work where the patient is weakest, or in some part that is below normal at the time the streptococci get into the blood stream from the tooth abscess. The liver is another point of attack. So there are quite a number of systemic organs that are directly affected by the poison of pus from the tooth abscess.

Dr. Hartzell, of Minneapolis, Minnesota, has long been an original investigator of the phenomena of Systemic Disorders Due to Defective Mouth Conditions. On account of his ability and inclination in following up this subject he was given the task of reporting on this subject for the

Research Branch of the American Dental Association. Dr. Hartzell was the first American doctor and dentist (he is both) to show the connection between the abscessed tooth and rheumatism. He has made complete explanation of this and also reports, as does Dr. Duke, that the following systemic diseases, rheumatism, arthritis, neuritis, iritis and other eye inflammations, vegetative endocarditis, myocarditis, peritonitis, meningitis, gastric and duodenal ulcer, pancreatitis, pneumonia, pleurisy, etc., are often of streptococcic origin due to direct infection from chronic points of infection (foci) as pyorrhea and abscessed teeth.

Dr. Hoff, of Ann Arbor, Michigan, reports that it has long been supposed that rheumatism was the result of infection, but

nothing definite as to the source of the infection was clearly made out until recent years. As most internal infections have of late been connected in some way with the nose, mouth and throat, much experimentation has resulted in tracing these infections directly to the tonsils and teeth. At first it was thought that the infection was taken into the system through the stomach and alimentary canal, from open sores in the tonsils, and suppurating gums, alveolar abscesses, etc. But, as all such infection would be subjected to the destructive influence, as the gastric and intestinal juices before absorption, it does not seem probable that there could be enough of the active virus absorbed through this means to account for the exterior disturbances often encountered. At

the present time it is believed that so far as the teeth and tonsils are at fault the infectious virus is absorbed directly from the tissues by the absorbent vessels and is carried through the lymph and blood vessels to the joints and muscle tissues where it is deposited or finds favorable conditions for development, and so local points of disease are established in various tissues throughout the body where conditions favor development of these microorganisms which cause this particular disease. It is usual to find rheumatism affections in the joints and muscle tissues, which become pathologic, that is painful, or even in some instances abscessed. If it should locate for instance, as it frequently does, in the heart muscle, it becomes a most serious affection and may

be fatal in a short time; or in some other tissue not so highly specialized, it may assume chronic form and only annoy without fatal results.

Dr. Goadby, of England, in 1912, reported his observations on Oral Sepsis, and his findings were the same as those already mentioned. The pus in the abscess at the root of a tooth is pressed by force of the jaw pressure in eating and gains entry into the blood by veins and arteries that surround the pus sack. At every mealtime this occurs similar to a hypodermic of streptococci three times a day. This process goes on unthought of by the patient. The rheumatism, the low pulse, low blood count, headache, are doctored for the malady, not for the removal of the cause, unless the physician has the patient con-

sult the dentist. In the case of a blind abscess under a filled devitalized tooth or teeth an X-Ray would disclose the abscess. In pyorrhea conditions the spongy gums and pus pockets would be observable to the eye. The ingress into the blood direct from tooth abscess of such regular amounts of streptococcus and staphylococcus bacteria lower the value of the blood, cause it to be less vital, and the heart becomes weaker and altered in action, taking the pep out of the patient. In severe cases vegetative endocarditis takes place. The picture of this condition of the heart looks like cobwebs stretched all across every way over the valves.

Dr. Barber, of Chicago, Illinois, has written at length upon the value of good teeth as the necessary requisite for good health

through good digestion. Many people by loss of teeth, through decay and extraction, have not enough teeth to properly masticate the required food. In some cases the articulation of the teeth has changed, so that occluding teeth do not actually touch each other in biting. This allows the food to go to the stomach in an indigestible form and makes digestion incomplete, causing indigestion. This brings up the case of Horace Fletcher, a member of the American Association for the Advancement of Science, who on account of indigestion was at fifty given up to die. He went to his dentist and was advised to have his teeth regulated so he could properly masticate the food and obtain one hundred per cent. digestion. With this done he paid particular mental attention to his

eating, seeing to it that he did not swallow the food until he had thoroughly chewed it. He wrote some about this subject also and the newspapers took it up, and this publicity resulted in the expression "Fletcherize." Mr. Fletcher at last reports was over seventy.

The foregoing points very plainly to the value of Preventative Dentistry, and as already explained elsewhere to do this it is necessary to call the patient periodically and perform the dental prophylaxis. Greater public education is needed on the value of this work. It is so easy to prevent dental troubles, but after they have gained a start it takes an operation to stop them. Prevention through periodical prophylaxis is the best system.

THE POSSIBLE NEW LIFE POLICY

Life insurance performs a national service by providing for the families of insured persons after death of the insured, returning a lump sum amount in cash representing in various degrees the insured's earning power. On policies with health indemnity clauses there is a payment for the duration of the sickness depending upon the terms of the particular policy. These two operations of insurance companies do much toward keeping the mechanism of business turning, besides benefitting dependents of the insured.

The next step would seem to be to pay attention to the insured during life with an advisory and first-aid service pertaining to

his health. Also to providing through the operations of the same service of an enlarged field for insurance by bringing the health of applicants up to the point of an insurance risk.

As my allotted subject is to point out the importance of Dentistry in this respect, I will mention the value of health service in localities where much insurance is already written or intended to be written. This service is of much value to the insured and indirectly to his dependents. Every medical clinic of this kind would do well to have at least one unit of dental equipment and at least one dental clinician besides the attending physician and nurse.

At the present time the populace are only ten per cent. sold on the subject of Dentistry and

much less per cent. sold on the subject of Preventive Dentistry leaving very great the possibilities to increase the health of the nation and to reduce the death rate through prevention of dental troubles, especially through the systemic disorders which arise in the teeth and gums as foci of infection. That is another way of stating that the people do not realize the intimate relationship that exists between the teeth and the general human system. They do not realize how important a part of the human anatomy the teeth are. If it is understood that the four cylinders of the heart are in constant automatic operation and that one pair of valves take the venus blood from the system and drives it through the lungs, and the other pair take the then arterial blood from the

lungs and drives it through the body system from which it returns to repeat the cycle, then it can be easily understood how blood circulating around abscessed teeth carries the infection at once to the heart and the next moment to the arms, fingers, limbs, feet, intestinal regions, and head. Under the influence of bacteria in the blood from abscessed teeth and pyorrhea gums the heart is not normal and often excludes the applicant for insurance from a clean record on his heart to the extent that he is declined as a risk. This condition can be corrected by dental attention and upon a subsequent test of the heart the applicant could be accepted.

The dangerous systemic infection at an abscessed tooth or pyorrhea gums often is held back

by the natural health of the patient until some fever reduces his resistance, at which time the infection gains headway, or heartway in this instance, in the blood, and complications set in. The regular list of bacterial infection diseases results from tooth infection such as arthritis, pneumonia, myocarditis, endocarditis, peritonitis, gastric ulcer, pancreatitis, pleurisy, nephritis, iritis, meningitis, rheumatism, also deafness and insanity.

A dollar spent in prevention saves large amounts in cure or relief. You have no doubt heard or read of persons contracting a cold or grip and the developments leading into one or more of the above catagories. The teeth play their proportional part in this infection the same as do the tonsils, throat, and nose. Dentistry is a

health profession, a highly developed specialist branch of medicine, and has an important field in the preservation of health.

The first-aid health service should comprise the kind of supervision that would enable the insured to live his natural term of life in which the organism naturally wears out, not permitting a part, such as a tooth, to wear out and through neglect to poison the whole system and cause the death.

Inasmuch as the mortality tables are compiled from actual death statistics and the load in the premium is based on the cost of operating insurance companies, it is possible by bringing a larger number of applicants within the requirements of the insurance risk to greatly increase the number on whom insurance

can be written without much increased cost of procuring this additional business.

Another idea is the tooth examination of the applicant for life insurance. The plan that seems best to the writer's mind is to have one or more dental clinicians in every locality just the same as you have one or more physicians in every locality. The dental clinician according to this plan would make a prophylaxis and tooth examination both instrumental and by X-ray of each applicant and render the dental recommendations on a formal card. The applicant could then have his family dentist put his teeth in order according to the recommendations outlined by the insurance dental clinician and then return to the insurance dental clinician to have

the work checked up. The card with the O. K. could then be turned in along with the medical examination card.

A popular opinion about the teeth is that not until a tooth aches is it time to go to the dentist. This is just inverse of the truth. It is then too late as the pain announces the arrival of the danger point, and in many cases only an operation can prevent serious trouble. Periodical prophylaxis intercepts the process of decay and discovers the formation of pyorrhea and abscesses while they are still in a curable stage, without the accruing of systemic maladies or unnecessary loss of the serviceability of the teeth.

The payment of life insurance premiums by a policy holder is his financial prophylaxis, a pre-

vention from leaving his dependents in want. Health prophylaxis is the next subject that should interest him. He should intercept the forces which are at work and which only announce their presence too late by pain. The fear and pain connected with Dentistry are not the dentist's fault. By going to the dentist periodically all pain is avoided, health is maintained, and natural teeth are preserved for old age.

With health service alongside, life insurance would mean preservation of life, besides payment of an indemnity at death. It is possible to give a health service along with life insurance policies, or at least health directions at the writing of the insurance, applicable to the individual, that would materially lengthen the

life of the insured. And it is possible by clinical first-aid health service and health restorative recommendations to greatly increase the number of available life insurance risks.

Summarizing the foregoing, it is possible through Dentistry to increase the number of holders of life insurance policies and to lengthen the life of policies in force, and to reduce the claims on sick and debility clauses. It is besides evident that a clean tooth certificate from the dental clinician is very desirable, because so many contractable diseases are traceable to the teeth.

ITEMIZATION of Instruments, Supplies and Equipment Used in Institutional and Industrial Dental Clinics and in Hospital Infirmaries.

Instruments and Supplies 1-Z

FIRST AID INSTRUMENTS AND PROPHYLAXIS SUPPLIES

Instruments and supplies "1-Z" together with any equipment "2-Y," "3-X," "4-W," "5-V" or "6-U" make a complete First Aid Outfit.

INSTRUMENTS

1 C. S. D. P. Scaler No. 1.
1 C. S. D. P. Scaler No. 5.
1 C. S. D. P. Scaler No. 6.
1 C. S. D. P. Scaler No. 9.
1 C. S. D. P. Scaler No. 11.
1 C. S. Chisel No. 48-L.
1 C. S. Scaler No. 2.
1 C. S. Scaler No. 13, Younger-Good.
1 C. S. Scaler No. 33.
1 C. S. Scaler No. 34.
1 C. S. Scaler, Tomkins, No. 11.
1 C. S. File, Tomkins No. 1.
1 C. S. Smith Prophylaxis File No. 13.
1 C. S. Smith Prophylaxis File No. 14.
14 C. S. Handles No. 10-A.

1 C. S. Explorer Point No. 17.
1 C. S. Explorer Point No. 6.
1 C. S. D. E. Handle No. 17.
1 Set L. H. Bates Scalers.
1 Pair Pliers No. 11.
1 Mouth Mirror.
1 Woodson D. E. Plastic Inst. No. 1.
1 Woodson D. E. Plastic Inst. No. 2.
1 Woodson D. E. Plastic Inst. No. 3.
1 Amalgam Carrier and Plugger No. 7.
1 Cement Spatula No. 36.
1 Hand Porte Polisher, Contra Angle.
1 Water Syringe, Moffatt.
1 Kuroris Cotton Carrier.
1 Alcohol Lamp.
1 Gum Lancet.
1 Mounted Arkansas Stone, in box.
1 Magic Napkin Holder.
1 Ribbon Saw.
1 Package Kerr Broaches, fine.
1 Package Kerr Broaches, extra fine.
1 Package Pulp Canal Cleaners.
1 Broach Holder.
1 Ivory Cotton Roll Clamp, Bicuspid.
1 Ivory Cotton Roll Clamp, Molar.
1 Pair Tooth Forceps No. 150, Incisor and Root, Upper.
1 Pair Tooth Forceps No. 151, Incisor and Root, Lower.
1 Pair Tooth Forceps No. 18-R, Upper Molar, Right Side.
1 Pair Tooth Forceps No. 18-L, Upper Molar, Left Side.

1 Pair Tooth Forceps No. 15, Lower Universal Molar.
1 Pair Tooth Forceps No. 213, Incisor and Cuspid, Upper.
1 Pair Tooth Forceps No. 210, Upper Third Molar.
1 Pair Tooth Forceps No. 222, Lower Third Molar.
1 Chip Blower.
1 Abscess Syringe with Platinum Point.
1 Hypodermic Syringe, Tag Record complete with Needles and Attachments.
1 Contra Angle "U" attachment for Doriot No. 3.
1 Gross S. S. W. Asst. No. 2 Burs.
6 Huey Mandrels.
1 Porte Polisher Mandrel No. 307.
1 Cement Slab No. 8.

SUPPLIES

1 Box Prophylaxo Tablets.
1 Bottle Taxi.
1 Box Burlew Polishers, Asst.
1 Box Mounted Wheel Brushes.
1 Box Mounted Cup Brushes.
1 Box Tooth Polishing Brushes for Porte Polishers.
6 Mounted Carbo Points.
1 Box Wood Points for Hand Porte Polisher.
1 Lb. Pumice.
1 Box Temporary Stopping, Asst.
1 Oz. Sterling Alloy.
¼ Lb. Cone Mercury, Sacco.

1 Box Caulk Petroid Cement.
1 Box C. & B. Cement.
1 Box 100 Absorbent Cotton Rolls, 6-in., Asst.
1 Box 50 Aseptic Dental Napkins, J. & J. No. 2, 6x6.
1 Small box Absorbent J. & J. Cotton.
1 J. & J. Waste Receiver and Cartons.
1 Cotton Holder No. 1.
1 Spool 150 yds. Waxed Floss Silk, J. &. J.
1 Oz. Waites Anesthetic, without Cocaine.
1 Tube Procaine (Novocaine) Tablets.
1 Tube Salt (Ringer) Tablets.
1 Dissolving Cup 3cc Pyrex Glass.
1 Dappan Glass Cup.
1 Bottle Peroxide Hydrogen.
1 Apron for Patient, Oiled Silk.
1 Miniature Bunsen Burner and Tubing.
1 Box Finishing Strips, Asst.
6 Boxes Polishing Disks, Asst.
1 Box Abscess Remedy and Root Canal Filler.
1 Box Gutta-percha Points.
1 Box J. &. J. Absorbent Cotton Points.
1 Package Orange Wood.
1 Box Carmi Lustro Tape.
1 Bottle Phenol 95%, Dental Medicine.
1 Bottle Eugenol, Dental Medicine.
1 Bottle Tricresol and Formalin, Dental Medicine.
1 Bottle Black's Mixture, Dental Medicine.
1 Bottle Campho Phenique, Dental Medicine.

1 Bottle Trichloracetic Acid, Dental Medicine.
1 Bottle Tincture Aconite, Iodine and Chloroform.
1 Bottle Tricresol.
1 Bottle Tincture Calendula.

Equipment 2-Y

1 Harvard Peerless Chair.
1 Electro Dental Wall Type Engine, Folding Bracket Type, All-Cord, A. C. or D. C.
1 Doriot Handpiece and Wrist Joint.
1 Weber Cuspidor Pedestal, Type 55.
1 Harvard Cabinet No. 62-D.
1 Electro Dental Sterilizer, Onyx Base.
1 Glass Top Aseptic Table, 20x16.
1 Sacco Boss Wall Bracket.
1 Consolidated Vitrilite Top Aseptic.

Equipment 3-X

1 S. S. W. Equipment Combination "D," consisting of Diamond Chair S. S. W. All-Cord Electric Engine, Doriot Handpiece No. 3, D. C. or A. C., Current any Voltage, Bracket and Table Glass Top No. 3, Electric Light and Bracket, Spiral Flush Fountain Cuspidor, Air and Gas Connections.
1 American Cabinet No. 60-E.
1 Castle Sterilizer, Electric, No. 410-D.
1 Glass Top Aseptic White Enamel Table, 20x16.

Equipment 4-W

1 Ritter Ideal Columbia Chair.
1 Ritter Wall Type Folding Bracket, Engine Model "C," A. C. or D. C., All-Cord.
Doriot Handpiece No. 3.
1 Weber Cuspidor No. 55, with Attachment to Chair.
1 American Cabinet, Steel, No. 110.
1 Consolidated Sterling Bracket for Wall.
1 Cleve. Dent. Peerless Aseptic Vitrolite Top.
1 Castle Electric Sterilizer No. 410-D, on Separate Stand.
1 Aseptic Glass Top Table, 30x24.

Equipment 5-V

1 Ritter Ideal Columbia Dental Chair.
1 Ritter Unit Equipment, consisting of Ritter Electric Engine A. C. All-Cord Type, Weber Cuspidor, Bracket and Glass Top Table, Complete Switch Board and Appliances.
1 American Cabinet No. 99.
1 Pelton & Crane Sterilizer.
1 Glass Top Stand, 20x16, Glass Top with Glass Shelf, Metal Frame.

Equipment 6-U

1 S. S. W. Diamond Chair.
1 S. S. W. Equipment Unit Stand No. 3, consisting of Spiral Flush Fountain

Cuspidor, Electric Light and Electric Engine any Voltage D. C., and Doriot No. 3 Handpiece, Bracket and Bracket Table No. 3.

1 Lee Smith & Sons Co. Steel Cabinet No. 506.

1 Aseptic Glass Top Table.

1 Holmes Electric Sterilizer.

1 Sanican Receptacle.

Summary

OUTFIT 12-Y-Z—Supplies 1-Z; Equipment 2-Y.

OUTFIT 13-X-Z—Supplies 1-Z; Equipment 3-X.

OUTFIT 14-W-Z—Supplies 1-Z; Equipment 4-W.

OUTFIT 15-V-Z—Supplies 1-Z; Equipment 5-V.

OUTFIT 16-U-Z—Supplies 1-Z; Equipment 6-U.